The Emergence of Value Chain Thinking

Togar M. Simatupang*
School of Business and Management,
Bandung Institute of Technology,
Bandung, Indonesia
Fax: +62-22-2504249
Email: togar@sbm-itb.ac.id
*Corresponding author

Pairach Piboonrungroj
Faculty of Economics,
Chiang Mai University,
239 HuayKaew Road, Suthep, Muang,
Chiang Mai 50200,
Thailand
Fax: +66-53-942202
Email: me@pairach.com

Sharon J. Williams
College of Human & Health Sciences
Swansea University, Swansea,
United Kingdom
Fax: +44-1792-295662
Email: sharon.j.williams@swansea.ac.uk

Abstract

The concept value chain has been promoted by Porter for more than three decades. A value chain represents a chain of activities that an organization performs to deliver a valuable product for the market. Porter's value chain assumes that an organization is a system composed of inputs, transformation processes, and outputs. Each activity in the system

involves the acquisition and consumption of resources. How the organization carries out value chain activities determines costs and profits. One enhances the competitiveness of a company by improving its value chain structure. However, little attention has been given to developing value chain thinking. This paper examines the emergence of value chain thinking and proposes new value chain thinking that involves a chain of activities linked to one another in order to sustain value. A conceptual model is presented which consists of four steps: value discovery, value design, value delivery, and value capture. A methodology is also proposed in which to operationalize the value chain thinking.

Key Words: *value chain, value chain management, value chain thinking, supply chain management, value chain methodology*

Reference to this paper should be made as follows: Simatupang, T.M., Piboonrungroj, P. and Williams, S.J. (xxxx) 'The emergence of value chain thinking', *Int. J. Value Chain Management*, Vol. X, No. Y, pp.xxx–xxx.

Biographical notes: Togar M. Simatupang is a Professor of Operations and Supply Chain Management at the School of Business and Management in Bandung Institute of Technology, Indonesia. He has extensively published in logistics and supply chain management journals. He has been attributed the Highly Commended Award by Emerald Literati Network for his research in supply chain management. His current research and teaching interests focus primarily on supply chain management, logistics systems, value chain management, creative economy, design thinking, and entrepreneurship.

Pairach Piboonrungroj is a director of Supply Chain Economics Research Centre (SCERC) at the Faculty of Economics, Chiang Mai University, Thailand. He received a PhD in Logistics and Supply Chain Management from Cardiff University in the United Kingdom in 2013. His research focus on applying economic theories and econometrics techniques to supply chain issues especially in the service industry such as tourism and the MICE industry. Pairach is also leading Chiang Mai R user group, which focus on the application of R programming language. He is also the founder of Asian Supply Chain Academy.

Sharon J. Williams is a Health Foundation Improvement Science Fellow and Senior Lecturer with the College of Human & Health Sciences, Swansea University where she leads the

Swansea Centre for Improvement and Innovation in Healthcare. Before joining Swansea, Sharon was member of the Logistics and Operations Management Section at Cardiff University's Business School. Prior to this she was Assistant Professor with Warwick Medical School where she was instrumental in the design of the clinical systems improvement education and research activity. As part of her fellowship Sharon is examining the application of Lean and Agile in the design of patient pathways.

1. INTRODUCTION

A good distribution network will undoubtedly provide a competitive advantage for a company (Rushton et al., 2010). Competitive advantage is created through the creation of ever-increasing value as a result of cooperation between organizations involved in the distribution activities of the company's products (Walters and Rainbird, 2004). Good distribution can reach a large number of consumers and at the same time provide more convenience and benefits to the customers. A major part of the distribution strategy is to decide which functions are needed and which organizations will be responsible for these functions. Intermediaries offer the importance of cost and the advantage of time in the wide product distribution. The consideration of price also affects the effectiveness of distribution channels used.

Supply chains that are connected to one another, due to various technological advances, require a more integrative and structural approach to solve various issues (Porter, 1996). The main cause of complex problems in the supply chain is due to the increasing connectivity between the value components and how the value is created and delivered. Thus, a problem has nothing to do with a value component that is created, but it has to do with the strength of connectivity and delivery of value creation that is interrupted or wasted. The higher the mutual relationship among the value elements, the more complex the problem a supply chain has. The complexity of value connectivity has made a mechanistic approach irrelevant because it focuses more on a value component than on the value connectivity. The competition to capture a limited market has made the players in the supply chain pay more attention to the value chain system. The value chain approach was first developed by Porter (1985). It was initially designed to introduce a template to analyze the value chain in a manufacturer. Later, it was developed to analyze many players along the supply chain in order to obtain a broader picture of the issues and obstacles a manufacturer might face.

Organizations such as the World Bank (Gereffi and Frederick, 2010), Food and Agriculture Organization (2007), USAID (2007), and UNIDO (2011), have adopted and developed supply chain analysis to enhance the competitiveness of commodities and social development in developing countries. Various efforts have been based on the recommendations of a value chain analysis in an effort to increase the competitiveness of the various players and encourage equity across the supply chain. In other words, all players in the value chain - manufacturers, suppliers, employees, customers, and the retail distributors, look for their own competitive edge, respectively. Various organizations or players identify the parts of their value chain that are vulnerable and need to be maintained so that they can optimize their most sensible strategy. Value Chain Thinking is important in creating and adding value by having collaboration between players in the supply chain. Any member of a value chain can either be influenced by or influence the changes of customers' preferences.

Although Value Chain Thinking was developed to target the supply chain inclusively, its development has received less attention compared with the development of Lean Thinking and Design Thinking. Lean thinking, which often starts from the shop floor level, has expanded and been modified so that it can be applied in a variety of sectors (Hines et al., 2004) including healthcare (Burgess and Radnor, 2013). Likewise, Design Thinking, which was originally aimed at answering the questions concerned with product design, has now evolved to be more of a problem solving approach for service organizations (Liedtka, 2011). Both Lean Thinking and Design Thinking have developed guidelines and principles in which to aid understanding and application.

This study aims to provide an alternative perspective of Value Chain Thinking and develop a methodology to support its application. Value Chain Thinking is a perspective in which a supply chain is seen as interconnected value chains which are created and delivered by a variety of players that make them valuable for the end customers. Value Chain Thinking offers an alternative analytical approach to analyze complex problems in supply chains by not only focusing on one player along the supply chain but also focusing on the inter-connection between the value components. Value Chain Thinking can investigate a problem by looking at one player's view in order to know other inter-dependency among the component value perceived by each player. Value Chain Thinking has become a way to understand the related supply chain problems better.

Value chains can be mutually supportive or contradictory to one another, thus requiring an integrated perspective of various players' perceptions of the interacted players. Value chain methodology is built on four interrelated perspectives, i.e., the Value Chain Thinking, agent-based approach, activity-based approach, and governance. The incorporation of these four elements makes the methodology useful both for the analysis and synthesis of a given supply chain.

This paper is organized as follows. The next section discusses the literature review which critically investigates the lack of attention to the development of Value Chain Thinking and the direction of its future development. This is followed by a discussion on the basis, format, and methodology of Value Chain Thinking. The last section concludes with a summary of the research along with limitations and areas of further research.

2. LITERATURE REVIEW

The value chain concept was first introduced and popularized by Michael E. Porter in 1985 (Porter, 1985). A Value Chain shows how a product moves from the stage of raw materials to the end consumer. This includes a wide range of activities required to handle a product or service from the conception, through various phases of production (involving a combination of physical transformation and input from various services producers), delivery to the final consumers, and final disposal after use. The Value Chain consists of a set of primary and supporting activities. For the main activities these consist of incoming logistics, operations, outbound logistics, marketing and sales as well as services. The supporting activities consist of a company's infrastructure, human resource management, technology development, and activities to achieve something. Each function in the organization must know what happens to the product at each stage to ensure value is being added to the product. When the products add value the business will generate profits.

2.1. Value Chain

Porter (1985) defines value as the maximum amount an individual is willing to pay to procure a good or avoid something undesirable from a provider. Alternatively, Pitelis (2009) describes value as the "perceived worthiness of a subject matter to a socio-economic agent that is exposed to and/or can make use of the subject matter in question." This definition considers

“subject matters” which is independent to “willingness to pay”. Value is the characteristic of a performance, facility, and attribute, and all other aspects of goods and services to which consumers are willing to give their resources (Prahalad and Ramaswamy, 2004). In principle, any value consists of four components: the object, either as a physical or abstract variable; the attribute that determines the quality or nature of an object; the internal relationship between objects; and the environment where the network of value exists.

A value chain originally represents a set of activities that a focal firm operating in a specific industry performs in order to deliver a valuable product or service for the market (Porter, 1985). A value chain is then broadened to describe a series of organizational activities that creates, delivers, and captures value at each step, starting from the processing of raw materials to ending with the finished product in the hands of the end users. Value chain management can be defined as the process of managing all sequences of the integrated activities and information to transfer value along the entire supply chain.

2.2. Value Chain Analysis

Porter (1985) explains that Value Chain Analysis (VCA) is a strategic analysis tool that is used to better understand competitive advantage, to identify where customer value increases or decreases cost, and to better understand the company's relationships with suppliers, customers, and other companies in the industry. The Value Chain identifies and connects a range of strategic activities of the company (Kaplinsky and Morris, 2001). Womack et al. (1990) define VCA as "a technique widely applied in the fields of operations management, process engineering and supply chain management, for the analysis and subsequent improvement of resource utilization and product flow within the manufacturing processes." Alternatively, Shank and Govindarajan (1992) simply define VCA as a tool for understanding the value chains that make up a product. Value Chain is derived from such activities as handling raw materials, delivery to the consumers, and after-sales services. The nature of Value Chain depends on the nature of the industry, thus the nature of a Value Chain for a manufacturing company, a service company, and a non-profit organization will each be different.

VCA views a company as one part of the Value Chain of a product. The Value Chain of a product is an activity that originates from the raw materials to the after-sales handling. The Value Chain includes the activities that occur because of the relationship with the suppliers

(supplier linkages) and relationships with the consumers (consumer linkages). These activities are separated but very dependent on each other (Porter, 1996). VCA helps managers to understand the company's position in the Value Chain of a product and to enhance the product's competitive advantage. The purpose of VCA is to identify the stages of the Value Chain where the firm can increase value to the customer or lower costs. The decrease in expenses or increase in value added of a product will make the company more competitive. Fearne et al. (2012) state that the approach of value chain analysis is the frontier in building sustainable corporate value.

An organization must provide value in order to attract and retain its customers. Value is a performance characteristic, feature and attribute, or any other aspect of either the goods or services that customers are willing to provide a price for both the goods and the price received, which is usually in the form of money (Porter, 1985; Ilyas et al., 2006). The value provided to the customers through the transformation of raw materials and other resources to some of the products or services are required by the customers. The assessment of value chain offers a comprehensive and challenging approach to the organization focused on creating and maintaining the customers and therefore creates a real competitive advantage.

The representation of a value network along a supply chain has been provided in different research stream. Keeney (1992) offers value focused thinking as opposed to alternative focused thinking in a decision making situation to emphasise different decision objectives. The attention is given to a value network as a set of objectives, intentions, desired results, and decision advantages. The decision makers attempt to start with the best potential outcome and then work to achieve it. Specification of value is represented as targets for solutions that define possible objectives that should be met by solving a particular problem. Lakhal et al. (2001) formalized value measured by total revenue as the result of negotiations between actors. Gordijn and Akkermans (2003) propose the e3-value methodology that addresses the creation, exchange, and consumption of economic value in a network of enterprises. Value webs can be modeled using formalized constructs such as market segments, value activity, and value exchange. The use of the e3-value approach helps relevant stakeholders understand the representation, design, and analysis of the value webs and conduct software requirement analysis. The output is a value model that consists of different actors who exchange items of economic value with each other and perform value adding activities.

Then, the concept of Porter's supply chain (Porter, 1985), which is a template for a manufacturer, was developed for inter-company cases along a supply chain that serve a particular market segment. Value Chain is defined as a group of vertical organizations that can add value to the goods or services in the movement of a raw material to a finished product that is supplied to the consumer and/or end-user organization. The term Value Chain is used to focus on the process, activity, organization, and structure that are combined to create the customer value as the product moves from its original value to the end user. VCA is an analysis of the activities that produce value, both from within and outside the company. The concept of Value Chain gives the perspective of a company's position in the value chain industry. VCA helps companies to understand the Value Chain that forms a product. The Value Chain starts from the raw materials to the product handling after it is sold to the consumers. Companies must be able to recognize its position in the product or services. It is very important to identify the opportunity in improving competitiveness.

The value chain framework has been adopted as a powerful analysis tool for the strategic planning in individual business units and extended to the whole supply chain. Walters and Lancaster (2000), for instance, applied value chain strategy to devise important activities that add value in the product development process and delivery across different players. The strategy requires a proper structure to coordinate the required functions to perform value adding activities and a proper communication approach to synchronize the activities of these functional units efficiently. Furthermore, Francis et al. (2008) applied the value chain analysis method to examine the beef foodservice sector. The beef value chain is characterized by the high level of regulatory control, power relationships, and low profit margins. The analysis showed that the collaboration between producers and processors could eliminate unwanted wastes.

2.3. Value Chain Usage

Analysis of the value chain has been introduced and applied in local economic development, especially the commodity supply chain to order to improve competitiveness and promote equity (Humphrey, 2005). The value chain approach helps to describe the status of the value chain, to identify who is in charge and handles the commodity supply, to answer questions about the broad and specific rules along the supply chain, and provides an approach to building relationships that create value. Redesigning the value chain can be done, for example, by improving the ability of local companies to compete, improving outcomes for the

consumers, promoting policy targets, and improving the participation of small farmers. Creating jobs and income regionally always refers to the value chain with an understanding of what the market will pay (Humphrey, 2005). The main goal of value chain management is to maximize gross revenue that benefits all parties.

The value chain approach has been extensively used as an important entry point for involving small farmers to improve high value products for export markets (Trienekens, 2011). For example, the impact of growth in the livestock business on the small-scale livestock farmers depends on how the farmers in rural areas participate in high-value livestock markets (high-value commodity), either directly acting as producers or being active in a stock market (Food and Agriculture Organization, 2007). One attempt to address this condition is by changing the perspective, formulation, and analysis of the problems in relation to value chain thinking. The problems that exist today have made a supply chain system that is only focused on one part of the subsystem, not on how to unify all these subsystems. Analyzing and making improvement on one part may sub-optimise and cause disruption to the overall system and cause other parts of the system to reject the improvement. Hence, the most likely way to approach the problem is through Value Thinking, which looks at the problem as a part of the whole system. Efforts to encourage the participation of small-scale farmers needs market infrastructure, technical capacity building of the farmers, risk mitigation, and a collective action of producers.

2.4. Globalisation and Value Chain

The concept of value chain has recently been adopted in the analysis of globalisation (Gereffi et al., 2003; Kaplinsky, 2000). Previous work describes the application of a value chain framework to investigate how companies and countries can be globally integrated and to assess determinants of global income distribution. Kaplinsky dan Morris (2001) asserts a common perspective about the direction of globalization that leads to wider income disparity for intra and inter countries. The author finds that value chain analysis assists to explain the process of income disparity phenomena in a dynamic perspective.

The main contribution of the global value chain is based on the theory of governance of globally integrated production systems which is relevant to the positioning of power of the leading companies in imposing terms of membership in the production system (Dolan and Humphrey, 2000; Pietrobelli and Saliola, 2008). Multinational companies such as Unilever, Procter & Gamble, Toyota, Nike, and Coca-Cola have used different governance structures to

manage their global operations activities. Governance becomes inseparated from value chain analysis for disclosing underlying rules that influence behavior of different actors along a supply chain. Gereffi et al. (2003) specifically attribute modes of value chain governance as a combination of transaction complexity, ability to codify transactions, and supplier complexity that determines different value chain coordination.

2.5. Co-creation of Value

Traditional supply chain strategy assumes that customers are involved in a company's product or service only at the end of the company's value chain or when the market offers have been completed. The subsequent development of supply chain analysis is challenging the players to invite their target customers to be involved in all stages of the value chain. The second revolution of Value Chain Thinking is the emergence of the concept of co-creation and shared value to improve the customer's engagement in supply chain management and their partnership in the supply chain (Prahalad and Ramaswamy, 2004). The advantages of co-creation consist of the continuous customer feedback and a more objective assessment of quality, the improvement in customer satisfaction, and the increase in customer lifelong loyalty.

Prahalad and Ramaswamy (2004) coined co-creating value between customers and the firm. The interaction between the firm and the consumer represents the locus of value creation and value extraction. Value is jointly created by both the firm and the consumer at multiple points of interaction. The basis of value is a co-creation experience. The new practice in value creation becomes a forum for conversation and interactions between stakeholders. Concomitantly, Vargo and Lusch (2004) imply that value creation is interactional. They propose service dominant logic based on the premise that firms can only make a value proposition as consumers participate in the value-creation process. Service dominant logic does not advocate that only the customer is involved in the process of co-creation of value, but also the firm's partners in the supply chain network. The latest variant of value chain concept is proposed by Porter and Kramer (2011), namely creating shared value (CSV) that describes firms are mutually dependent with its surrounding communities. The capitalization of the deep links between societal and economic can enhance competitiveness. The shared value process allows stakeholders to participate to include positive (social and environmental) externalities within the economic system.

The concept of service dominant logic has recently been applied to public services and management (Osborne et al., 2013). The authors emphasise the importance of co-production between the service provider and the customer which may also be linked to value co-creation (Grönroos and Voima, 2013). Hardyman et al. (2015) have extended this thinking to value co-creation within healthcare. They specifically examine patient engagement in service interactions and identify the need for further research to fully explore the barriers and enablers of value co-creation within this micro-level healthcare setting.

3. VALUE CHAIN THINKING

3.1. Definition of value chain thinking

Value Chain Thinking is a process to understand a phenomenon by not only looking at one or two particular sides. In other words, Value Chain Thinking is a process to understand a phenomenon of creating and delivering value will be influenced by many other phenomena. In a supply chain, each player independently should provide value, and by working collaboratively create a better and synergised value for the end users. Some of the advantages inherent in the Value Chain Thinking are recognized by how each player's view influences the definition of value, changing the perspective to see new leverage points, looking at the interdependence of players, sharing and appreciating the long-term interests and environment, and estimating the unexpected events.

Value Chain Thinking is defined as the process of understanding how to look at value networks from a broader perspective and look at how the overall pattern of the various components in the value network influence one another as a unit (Rayport and Sviokla, 1995). A key characteristic of a value network is that it has an attributive value identified in a certain nature that is associated with a particular pattern. This pattern of value connectivity will produce a characteristic of combined values, unlike the simple combination of values, which has its own goals, and whose interaction pattern among the players is performed to achieve a common goal. For example, in a supply chain, how to understand a value network depends on people, structure, and process that come together to enable the supply chain to work well and achieve its goals.

3.2. Need for value chain thinking

Why is Value Chain Thinking needed? The first reason is that people tend to have a somewhat

limited time frame. Often, they cannot visualize what happens after one event occurs. Value Chain Thinking is trying to widen the range of possibilities in a longer time frame. Value Chain Thinking also allows room for expectations to grow but ensures these are feasible and can be accomplished. The second reason is that planning is just an approach to seize an opportunity. A person can only prepare themselves and develop their own capacity. However, an opportunity always comes unexpectedly. Value Chain Thinking is concerned with the creation of a flexible plan to seize the right opportunities when they come. Value Chain Thinking is concerned with the development of plan B, plan C, and so on in readiness to seize the real opportunities. The third reason is that often a plan is made without a clear definition of how to execute and complete the plan well. The details of a forward looking visualization are quite important to maintain the focus and consistency.

The fourth reason is to provide the difference between the harvesting and the planting. Planting season is the time to find what can be done to design, to take care, and to maintain. Once the planting season is over, it is the time for someone to think how to reap the benefits or rewards of what has been planted or invested. The measurement for the planting is the output, while the measurement for the harvest is the impact.

The fifth reason is that relying on the good intentions only is not sufficient. The good intentions should be defined on the basis of the intended results. If there is no definition on the intended results, no one will know what results are expected. The achievement of the intended results will be realized if the people involved start with the right questions to define the intended results and work together to combine the required knowledge, ability, and passion to obtain good intended results. The sixth reason is that every plan will definitely need to be improved from time to time. Value Chain Thinking encourages the learning activities to improve a concept that has been developed to happen so that the concept can function properly to obtain the expected results.

3.3. Representation of value chain thinking

Value Chain Thinking is a discipline for examining a structure underlying a complex situation of a value cycle and network and for distinguishing the high-level changes from the low-level ones. Value Chain Thinking helps to see the deeper patterns that underlie some events and their details that form a value network. Value network is often hierarchical - composed of sub-values - which functions as a stand-alone system. With Value Chain Thinking, a player is

directed to look at a problem as part of a wider value network, not as a specific part which is separated from a wider value network. This will enable a player to identify the problems that exist in a supply chain more easily before thinking of both the solutions of these problems in a broader scope and the long term solutions for these problems.

The form of value representation that helps explain Value Chain Thinking is a structural diagram illustrating a network that has a causal relationship (a cause-and-effect relationship) that determines a value network. For this, there are two stages to understand the value of a network. The first stage is to shift from a value network that focuses only on the perspective of one player to a value network involving many players. The second stage is to shift from the focus on the value network to the value relationship pattern. How to structure a value network and develop a value relationship pattern is by implementing value focused thinking (Keeney, 1992).

3.4. Examples of value chain thinking

Value Chain Thinking is commonly found in various management activities. Its specific characteristic is on how a problem is completely resolved through a cyclical approach. One common example is the analysis of the value chain to gain a supply chain design that has a higher value added. A prominent example of typical concept of value chain thinking is the UK Design Council's four step Double Diamond Process used to co-create value (Design Council, 2015). The 4D-process methodology suggests progression through four major stages, namely: discover, define, develop, and deliver.

The 4D-process methodology consists of a process to discover, define, design, and deliver. The purpose of this methodology is to make a successful product launch. The modified 4D model which was developed for the purposes of Appreciative Inquiry (Cooperrider, 1986) is another example of Value Chain Thinking that emphasizes the positive desire visualization and how to make it happen. The 4D Model of Appreciative Inquiry consists of discovery (discovery), imagery (dream), design (design), and achievement (destiny) model. Most models using value chain logics are known to emphasis the progression and there is no emphasis on value innovation. Obviously, Value Chain Thinking which is being offered in this paper contains the necessary steps in achieving the realization of value for the benefit of all stakeholders.

3.5. Generic value chain thinking

There are two reference models that are used as the basis for the development of The Value Chain Thinking. The first reference model is the value creation framework developed by Murman et al. (2002). This framework is based on the principles of lean thinking to eliminate waste and consists of three steps: value identification, value proposition, and value delivery. Value Identification serves to examine the sources of value creation before the negotiation of the agreed value proposition is made so that all stakeholders are willing to deliver value to their customers.

The framework of value creation focuses more on the aspect of the customers' interests than that of the captured value of the players in the value chain. The second reference model is the concept of the technology value developed by Simatupang (2008) which describes how to realize and capture the value of technology. In general, a pattern of Value Chain Thinking, which can demonstrate the activities of value creation and value capture, is still needed (Lepak et al., 2007). Because of this, Value Chain Thinking being developed includes the creation process and value capture for the major players involved in the value chain activities.

What constitutes Value Chain Thinking? Value Chain Thinking refers to the stages of thinking to create, realize, and capture value useful for stakeholders. Without the benefit value for the stakeholders, it is difficult to see the final stage of an initiative. The principles of Value Chain Thinking are that the value chain is cyclical, and not linear, which means a value chain offers sustainability and profitability for the present and future. The innovation value can occur if the determining factors can interact in such a way that can generate the right combination to produce the intended result. Due to no definite plan, it is necessary to develop an alternative plan on how to deal with the potential risks associated with the proceeding developments and it is necessary to allow for continuous improvement. Since relying on the intention only is not enough, it is necessary to have detailed steps to achieve the intended results. Finally, the step by step process is based on verification before continuing to the next step. The Value Chain Thinking we are proposing is shown in Figure 1, which consists of four steps: value discovery, value design, value delivery, and value capture.

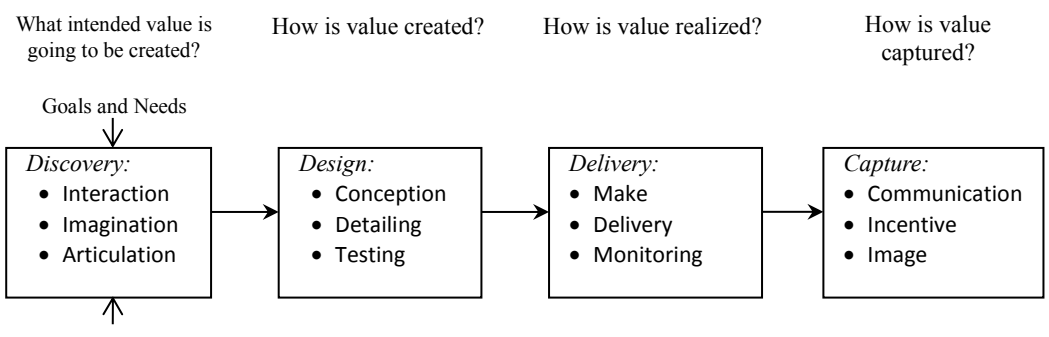

Figure 1. Generic Value Chain Thinking

Discovery is a step in determining a plan to set the important goals that can make a difference in the future. The required mentality in the discovery step is the spirit to increase the maximum part of a cake, not to take the cakes of others. Discovery is a forward looking view with the belief that the plan has the ability to influence the future. Expectation is formed not based on what is owned at the moment, but based on something that has not yet existed, such new ideas, technologies, and goods or services. The main activities in the invention are interaction, imagination, and articulation. The main result of the invention is the identification of value creating ideas.

The inspiration leads to the birth of ideas unpredictably. It sometimes comes out of intuition. Karl Popper (1992) stated the same thing about the important role of inspiration in the development of science. Science does not progress based on observation but moves forward through conjunctures, hypotheses and generalization beyond data.

How does imagination spawn ideas? Inspiration containing ideas are usually generated through a value creation process of the imagination. Imagination which is the mental images created for the things you want to achieve can be a great stimulus to inspire the emergence of ideas about what can be expected. Imagination is one resource that is rarely used by humans. Although humans are physically limited, they have the imagination. Some people are born with more capacity for imagination than others. However, in general, imagination can be developed with practice and consistent effort. Imagination is not wishful thinking. It is something that can be realized through serious thinking and hard training. Imagination is not just a thought. It is something that requires efforts to realize. The track to give birth to the ideas starts from the desire to create value developed through imagination that constantly inspires the birth of ideas about what to expect.

Imagination can be seen as a way of giving form, figure, or action to the desire impulse, for anything imaginable can offer a lot of possibilities. Imagination is a machine that regulates the synthesis of old concepts, ideas, or plans into a new combination in which the inter-connection of its elements is clearly understood. This synthesis of ideas generated is based on experience, education, and observation, which are sometimes processed through a social process and reflection. The synthesis of imagination accepts ideas from one source, from which a new application is made. William Clement Stone (1902-2002) called the process of synthesis of imagination as R2A2 (Recognize, Relate, Assimilate, and Apply) or as the processes to Identify, Connect, Understand, and Apply. For example, Jeff Bezos, founder of Amazon.com, did not take for granted the presence of the internet, but imagined the existence of a bookstore and being able to make a purchase in a single click. The ideas generated are the basic concepts that provide the power to act. The next step is to process the ideas that can be translated into a tangible form or better known by the term value proposition.

The Design step is iteratively developing a solution through a variety of tests. The main activities in design is the conception, specification, and testing. Value chain design helps identify weak points in the value chain and actions to add more value. For example, the analysis underscores the importance of quality that can increase access to more markets. A production contract with guaranteed prices along with quality requirements can be offered to production actors such as farmers and smallholder producers that motivate more producers to improve productivity (Humphrey, 2005). The value delivery is a step to deliver an expression in the form of goods or services to the targeted customers. The main activity in this phase is the finalization, delivery, and monitoring performance of overall value chain.

Value capture is the step to assemble value offering and is formed through a reward mechanism. A set of firms need to create and capture the most value possible while maintaining competitive advantage. Value capture is important to support ongoing survival because it allows for reinvestment in innovation to create a stronger collective competitive advantage (Jacobides et al., 2006). Value capture is the process of retaining some proportion of the value provided in every transaction. Value capture also represents a firm's ability to create profit from its transactions. The firm's appropriation capacity often depends on its bargaining power relative to partners and the competitive tension with its partners and among partners in its supply chain portfolio (Pitelis, 2009; Sridharan and Simatupang, 2013). When dealing with value capture, the chain members should develop value capture mechanisms to

align costs, risks, and revenues (Girotra and Netessine, 2014; Narayanan and Raman, 2004). The main activities in the value capture are the value communication, compensation in the form of dynamic pricing or funding for non-profit activities, and maintenance of the image.

4. VALUE CHAIN METHODOLOGY

Determining where a company is located in the entire value chain is a strategic analysis, based on consideration of the competitive advantage other companies have, because with the analysis the company can provide the best value to the main customers by giving them the lowest possible cost. For example, some companies in the computer manufacturing industry focus on making computer chips, while other companies primarily focus on making processors, hard drives, or monitors. Any company or organization represents a player involved along the supply chain. Each player has a certain value contribution and value capture. The players also have a role that affects the existing structure values. How the players interact depends on the rules that apply, which is known as governance. Therefore, the value chain methodology includes four essential components as shown in Figure 2: Value Chain Thinking, agent-based approach, process-based approach, and a governance perspective.

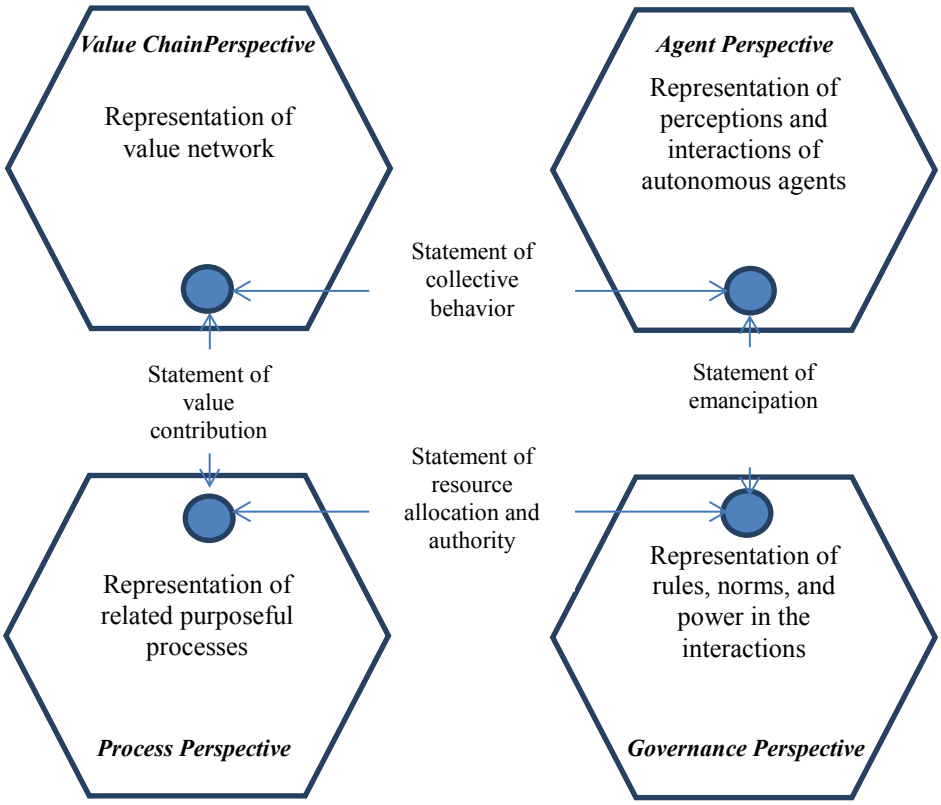

Figure 2. Components of Proposed Value Chain Methodology

Value Chain Thinking is a process in which players perform either simultaneously or individually in choosing, providing, and attaining a value. Value representation is a set of fully connected values that meet or exceed the expectations of all stakeholders in the value chain. The approach used in conducting the representation of a value network is Value-Focused Thinking (Keeney, 1992). Value-Focused Thinking is a multi-objective decision analysis (MODA). Decision analysis is often performed when there are multiple, conflicting objectives amongst the stakeholders. Keeney (1992) proposed that instead of focusing on the available alternatives, the decision process should start by considering what every player wants (values) and how the players achieve or realise these wants (alternatives). The interview process will identify individual values, and in order to produce a solution, there has to be collaboration between these different players individually.

Developing a model of using VFT MODA will involve discussing the values and objectives of the stakeholders in the form of a Focus Group Discussion (FGD), which naturally leads to collaborative analysis. The five stages of developing a MODA model are defining the overall objectives, defining a hierarchy of fundamental objectives/value hierarchy, choosing the evaluation measures for the achievement of lowest level objectives, transforming the evaluation measures into units of value, and weighting the objectives to reflect their relative values to the decision makers.

An Agent-based perspective considers players as a set of agents. An agent is an autonomous entity which observes through sensors, acts upon an environment, and directs its activity towards achieving goals. An agent maps every possible percept to an action. Agents may also learn or use knowledge to achieve their goals. They may be human beings working together towards a goal.

A Process-based approach considers a networking value as a result of activities performed by the players. Activity flows must undergo transformation in order for a supply chain to continually improve its performance. A Process-based approach is defined as a sequence of highly structured inter-organizational processes to procure, produce, and deliver a product or service so that the end customers are satisfied (Fawcett et al., 2011). The players need to identify the value chain activities to be performed by the company in the design process, manufacturing, and providing services to the customers. Some companies may be involved in a single activity of the whole activity. For example, some companies may only produce, while

other companies distribute and sell products. Value chain development varies depending on the industrial type (Mayoux and Mackie, 2007). For example, in industrial companies, the focus is more on the operation, advertisement, and promotion than on raw materials and manufacturing process (Hoffman and Aronnow, 2012). The activities should be determined on a relatively detailed operational level, especially for a large business activity.

Governance can be defined as a system that is made by all interested parties together with the companies to run their businesses well, in accordance with the rights and obligations of each party in order to improve the welfare of all parties (Pilbeam et al., 2012). Governance can be a set of processes, customs, policies, rules, and institutions that affect the direction, management, and control of a supply chain. Governance includes the relationships among the players involved. The main parties in the governance are employees, suppliers, customers, banks and other lenders, regulators, the environment, and the wider community. Governance affects the behavior of players in value creating and capturing, which is important to be noted (Kaplinsky, 2000). Gereffi et al. (2005), in particular, attribute the governance mode of the value chain in the combining of complex transactions, ability to codify transactions, and the competence of suppliers. The various combinations and status of these three attributes would therefore result in a different structural coordination of the value chain.

5. DISCUSSION

The main motivation of this research is to argue that value chain thinking has lacked behind the need to show its movement and contributions. The tendency of value chain thinking has been shifting from an internal perspective to an inter-organizational perspective. Previous research has focused on providing different approaches to value chain thinking. Nevertheless, there is not a single study attempting to propose rapidly evolving applications of value chain thinking. The most consistent and prominent approaches are based on the value chain in industrial production and organization (Gereffi and Frederick, 2010; Francis et al., 2008), local economic development (Humphrey, 2005; Kaplinsky and Morris, 2001), and agriculture (UNIDO, 2011; Rich et al., 2008). Value chain approaches have been used to analyse the dynamics of markets and to investigate the interactions and relationships between different chain actors. Value chain approach is applied by many development interventions that intend to engage stakeholders either individually or collectively into the production of market oriented high value products or services. Concepts and analytical tools for analysing the

functioning of value chain system are important to understand the impact of chain development interventions on chain actors and the supply chain system.

In this paper, we have explored how generic value chain thinking and a proposed value chain methodology can be used as a mechanism for applying value chain thinking. Instead of focusing on the internal value chain, the proposed protocol can be used to expose and challenge the current state of value chain system, facilitate a discussion about alternative scenarios, and conduct a simulation study to show that selective scenario can produce results comparable to existing situation. Furthermore, the implications to policy makers include the awareness of different value chain approaches and the importance of value chain references as guidelines for ensuring clarity and committment.

This paper stimulates further investigation of value chain thinking. The interesting agenda is to explore how other value chain approaches fit in the proposed protocol. The development of knowledge, tools and techniques also require further research. The perspective of value based on problem solving and Appreciative Inquiry (Cooperrider, 1986) also needs to be further developed by employing strategies from a progressive method starting with the discrepency with the ideal system and successively increasing the amount of appreciation. As suggested by Jacobides (2006), value capture does not only come from innovative efforts through improving the internal value chain, but it also benefits from investing in complementary resources amongsth the chain actors. Future research on value co-innovation is needed to demonstrate how and why the chain actors create, deliver, capture, and experience the value chain (Lee et al., 2012). Finally, value chain thinking offers the spectrum of supply and service chains akin to product-service systems (Van Ostaeyen et al., 2013; Tukker and Tischner, 2006) to create value for customers beyond selling products as functions. The ability of chain actors to create and deliver products and services that satisfy customer needs and wants deserves further investigation.

6. CONCLUSIONS

Value chain analysis was originally an analysis of activities that produce value both from within and outside a company. The value chain concept gives the perspective about where the company lies in an industrial value chain. Value chain analysis helps companies understand the value chain which forms a product/service. Value starts from the raw materials to the end

consumer receiving the product/service. Value chain analysis contains two main activities. The first activity is undertaken outside the company and the other activity is undertaken within the company, both of which have the same purpose of creating value. Companies must be able to recognize their position in the value chain and the opportunities to create value in a competitive environment.

The next evolution of the value chain is to provide a perspective of the company's position in an industrial value chain. Broader concept of value chain, compared with Porter's initial concept of value chain, is formed by many players along the supply chain. In this study, the Value Chain Thinking being offered is focused on a value network and a series of processes, both from within and outside the company.

The value formation of a product takes place in several stages in the supply chain such as raw material handling, manufacturing process, product sales, and the handling of after sales services. Furthermore, value chain methodology is used to implement Value Chain Thinking, agent-based approach, process-based approach, and governance perspective. The limitation of this study is the lack of empirical data to test the methodology and conceptual model presented here. Therefore, further research is required to verify Value Chain Thinking and to validate the appropriate value chain methodology. This study offers a novel insight to the formulation of Value Chain Thinking, which contributes to the academic discussion on value chains and is useful for practitioners managing supply chains.

Acknowledgements

The authors would like to thank Valerij Dermol, the Editor-in-Chief, for his support and two anonymous reviewers for their insightful comments to improve the quality of the paper.

REFERENCES

Burgess, N. and Radnor, Z. (2013) 'Evaluating lean in healthcare', *International Journal of Health Care Quality Assurance*, Vol. 26, No. 3, pp. 220-235

Cooperrider, D.L. (1986) 'Appreciative inquiry: toward a methodology for understanding and enhancing organizational innovation', *Unpublished Doctoral Dissertation*, Case Western Reserve University, Cleveland, Ohio.

Design Council (2015), *The Double Diamond Design Process Model*, Available at http://www.designcouncil.org.uk/news-opinion/design-process-what-double-diamond, Retrieved June 21, 2015.

Dolan, C. and Humphrey, J. (2000) 'Governance and trade in fresh vegetables: the impact of UK supermarkets on the african horticulture industry', *Journal of Development Studies*, Vol. 37, No. 2, pp. 147-176.

Fawcett, S., Waller, M.A. and Bowersox, D.J. (2011) 'Cinderella in the C-Suite: conducting influential research to advance the logistics and supply chain disciplines', *Journal of Business Logistics*, Vol. 32, No. 2, pp. 115-121.

Fearne, A., Martinez, M.G., and Dent, B. (2012) 'Dimensions of sustainable value chains: implications for value chain analysis', *Supply Chain Management: An International Journal*, Vol. 17, No. 6, pp. 575-581.

Food and Agriculture Organization of the United Nations (2007) *Livestock and Livelihoods: Priorities and Challenges for Pro-Poor Livestock Policy*.

Francis, M., Simons, D. and Bourlakis, M. (2008) 'Value chain analysis in the UK beef foodservice sector', *Supply Chain Management: An International Journal*, Vol. 13, No. 1, pp. 83-91.

Gereffi, G. and Frederick, S. (2010) 'The global apparel value chain, trade and the crisis: challenges and opportunities for developing countries'. *World Bank Policy Research Working Paper*, World Bank, Washington.

Gereffi, G., Humphrey, J. and Sturgeon, T. (2003) 'The governance of global value chains', *Review of International Political Economy*, Vol. 12, No. 1, pp. 78-104.

Girotra, K. and S. Netessine (2014) *The Risk-Driven Business Model: Four Questions That Will Define Your Company*, Harvard Business Press, Boston.

Gordijn, J. and Akkermans, J. (2003) 'Value-based requirements engineering: exploring innovative e-commerce ideas', *Requirements Engineering Journal*, Vol. 8, No. 2, pp. 114-134.

Grönroos, C. and Voima, P. (2013) 'Critical service logic: making sense of value creation and co-creation', *Journal of the Academy of Marketing Science*, Vol. 14, No. 2, pp. 133-150.

Hardyman, W. Daunt, K. and Kitchener, M. (2015) 'Value Co-creation through patient engagement in health care: a micro-level approach and research agenda', *Public Management Review*, Vol. 17, No. 1, pp. 90-107.

Hoffman, D. and Aronnow, S. (2012) 'The supply chain top 25: raisinig the bar'. *Supply Chain Management Review*, Vol. 16, No. 5, pp. 10-12.

Humphrey, J. (2005) *Shaping Value Chains for Development: Global Value Chains in Agribusiness*, Paper written for the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ).

Ilyas, R.M., Banwet, D.K and Shankar, R. (2006) 'Value chain relationship - a strategy matrix', *Supply Chain Forum: An International Journal*, Vol. 7, No. 2, pp. 56-72.

Jacobides, M.G., Knudsen, T. and Augier, M. (2006) 'Benefiting from innovation: value creation, value appropriation and the role of industry architectures', Research Policy, Vol. 35, No. 8, pp.1200-1221.

Kaplinsky, R. (2000) 'Globalisation and unequalization: what can be learned from value chain analysis, *Journal of Development Studies*, Vol. 37, No. 2, pp. 117-146.

Kaplinsky, R. and Morris, M. (2001) *A Handbook for Value Chain Research*, Brighton, United Kingdom, Institute of Development Studies, University of Sussex.

Keeney, R.L. (1992) *Value Focused Thinking*, Harvard University Press, Cambridge, MA.

Lakhal, S., Martel, A. Kettani, O. and Oral, M. (2001) 'On the optimization of supply chain networking decisions', *European Journal of Operational Research*, Vol. 129, pp. 259-270.

Lee, S.M., Olson, D.L. and Trimi, S. (2012) 'Co-innovation: convergenomics, collaboration, and co-creation for organizational values', *Management Decision*, Vol. 50, No. 5, pp.817-831.

Liedtka, J. (2011) 'Learning to use design thinking tools for successful innovation', *Strategy & Leadership*, Vol. 39, No. 5, pp. 13-19.

Mayoux, L. and Mackie, G. (2007), *Making the Strongest Links: A practical guide to mainstreaming gender analysis in value chain development*, International Labour Organization, Addis Ababa.

Murman, E., Allen, T., Bozdogan, K., Cutcher-Gershenfeld, J., McManus, H., Nightingale, D., Rebentisch, E., Shields, T., Stahl, F., Walton, M., Warmkessel, J., Weiss, S., and Widnall, S. (2002) *Lean Enterprise Value: Insights from MIT's Lean Aerospace Initiative*, Palgrave Mcmillan, New York.

Narayanan, V.G. and Raman, A. (2004) 'Aligning incentives in supply chains', Harvard Business Review, Vol. 82, No. 11, pp.94-102.

Osborne, S. Radnor, Z. and Nasi, G. (2013) 'A new theory for public service management? toward a (Public) service-dominant approach', *The American Review of Public Administration*, Vol. 43, pp. 135-158.

Pietrobelli, C. and Saliola, F. (2008) 'Power relationships along the value chain: multinational firms, global buyers and performance of local suppliers', *Cambridge Journal of*

Economics, Vol. 32, No. 6, pp. 947-962.

Pilbeam, C., Alvarez, G. and Wilson, H. (2012) 'The governance of supply networks: a systematic literature review', *Supply Chain Management: An International Journal*, Vol. 17, No. 4, pp. 358-376.

Pitelis, C.N. (2009) 'The co-evolution of organizational value capture, value creation and sustainable advantage', *Organization Studies*, Vol. 30, No. 10, pp.1115-1139.

Porter, M.E. (1985) *Competitive Advantage – Creating a Sustaining Superior Performance*, The Free Press, New York.

Porter, M.E. (1996) 'What is strategy?', *Harvard Business Review*, Vol. 74, No. 6, pp. 61-78.

Porter, M.E. and Kramer, M.R. (2011) 'Creating shared value', *Harvard Business Review*, Vol. 89, No. 1, pp. 2-17.

Prahalad, C.K. and Ramaswamy, V. (2004) *The Future of Competition: Co-creating Unique Value with Customers*, Harvard Business School Press, Cambridge.

Rayport, J.F. and Sviokla, J.J. (1995) 'Exploiting the virtual value chain', *Harvard Business Review*, Vol. 73, No. 6, pp. 75-85.

Rich, K., Negassa, A. and Ross, B. (2008) 'Concepts, applications and extensions of value chain analysis to livestock products in developing countries: a review and research agenda', *Mimeo*, ILRI (International Livestock Research Institute), Nairobi, Kenya.

Rushton, A., Chroucher, P., and Baker, P. (2010) *The Handbook of Logistics and Distribution Management*, 4th Eds., Kogan Page, London.

Shank, J.K. and Govindarajan, V. (1992) 'Strategic cost managemet: the value chain perspective', *Journal of Management Accounting Research*, Vol. 4, pp. 179-197.

Sridharan, R. and Simatupang, T.M. (2013) 'Power and trust in supply chain collaboration', *International Journal of Value Chain Management*, Vol. 7, No. 1, pp.76-96.

Trienekens, J.H. (2011) 'Agricultural value chains in developing countries: a framework for analysis', *International Food and Agribusiness Management Review*, Vol. 14, No. 2, pp. 53-82.

Tukker, A. and Tischner, U. (2006) 'Product-services as a research field: past, present and future. Reflections from a decade of research', *Journal of Cleaner Production*, Vol. 14, No. 17, pp.1552-1556.

UNIDO (2011) *Pro-poor Value Chain Development: 25 guiding questions for designing and implementing agroindustry projects*, United Nations Industrial Development Organization (UNIDO), Vienna, Austria.

United States Agency for International Development (2007) *Value chain program design:*

promoting market-base solutions for MSME and industry competitiveness, USAID, Washington, D.C.

Van Ostaeyen, J., Van Horenbeek, A., Pintelon, L. and Duflou, J.R. (2013) 'A refined typology of product–service systems based on functional hierarchy modeling', *Journal of Cleaner Production*, Vol. 51, pp.261-276.

Vargo, S.L. and Lusch, R.F. (2004) 'Evolving to a new dominant logic for marketing', *Journal of Marketing*, Vol. 68, No. 1, pp. 1-17.

Walters, D. and Lancaster, G. (2000) 'Implementing value strategy through the value chain', *Management Decision*, Vol. 38, No. 3, pp. 160-178.

Walters, D. and Rainbird, M. (2004) 'The demand chain as an integral component of the value chain', *Journal of Consumer Marketing*, Vol. 21, No. 7, pp. 465-475.

Womack, J.P., Jones, D. and Roos, D. (1990) *The Machine that Changed the World*, Macmillan, New York.